



## **Global Forum on Sustainable Development: Development and Climate Change**

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# **U.S. APPROACHES FOR INTEGRATION OF CLIMATE CHANGE POLICIES AND DEVELOPMENT ASSISTANCE**

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## U.S. APPROACHES FOR INTEGRATION OF CLIMATE CHANGE POLICIES AND DEVELOPMENT ASSISTANCE<sup>1</sup>

U.S. Agency for International Development (USAID)

### Abstract

*The United States has a comprehensive approach to climate change to address both near-term and long-term needs. The U.S. Agency for International Development (USAID) has implemented projects incorporating climate change concerns into its development portfolio since 1990. These activities have focused on mitigation of greenhouse gas (GHG) emissions, carbon sequestration in land use and forestry, and vulnerability assessment and adaptation planning. The USAID climate change program is an integral part of the U.S. approach on climate change, focusing on slowing the growth in greenhouse gas emissions and international cooperation to create an effective global response. USAID's foreign assistance and development role is key to involvement of the developing countries in resolving climate change, as climate change is a global problem that requires action by all. Recently, the U.S. has embarked on a series of bilateral partnerships with major international partners to pursue research on global climate change and deploy climate observation systems, collaborate on energy and sequestration technologies, and explore methodologies for monitoring and measuring greenhouse gas emissions, as well as multilateral partnerships to address climate change needs, including hydrogen, carbon capture and storage, methane capture, nuclear, and earth observation.*

### 1. U.S. approach to climate change

President Bush and his Administration have implemented a comprehensive and innovative program of climate change initiatives. The Bush Administration approach to climate change is strategic and dynamic, fitting with the breadth and time horizons of the problem.

The U.S. has reaffirmed its commitment to the United Nations Framework Convention on Climate Change and its ultimate objective — to stabilize atmospheric greenhouse gas (GHG) concentrations at a level that will prevent dangerous human interference with the climate (White House, 2002).

The U.S. approach is based on three components designed to address both the near-term and long-term aspects of climate change: (1) slowing the growth of GHG emissions; (2) laying important groundwork for both current and future action through major investments in science, technology, and institutions; and (3) international cooperation with other nations to develop an efficient and effective global response. The U.S. is also committed to the mutual goals of sustainable development and economic growth, as articulated in the Delhi Declaration from the Eighth Meeting of the Conference of the Parties to the UNFCCC (COP-8).

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The Administration's climate change policy states that the USAID "serves as a primary vehicle for transferring American energy and sequestration technologies to developing countries to promote sustainable development and minimize their greenhouse gas emissions growth." USAID's foreign assistance and development role is key to involvement of the developing countries in resolving climate change, as climate change is a global problem that requires action by all. In order to meet the future economic and energy needs of people in developing countries, it will be important to develop and transfer the technologies and expertise to reduce the emissions and natural resources demands made by current technologies.

### ***Discussion of U.S. approach***

The U.S. is engaged in transformational technology development so that advanced energy technology is more competitive in the market than conventional technology. Looking forward, countries will continue to use their abundant fossil fuel resources, but with deployment of the technologies under development, there will be reduced emissions of either criteria pollutants or greenhouse gases.

The U.S. is engaged in many partnerships, both between governments and public-private partnerships, at home and abroad to move the climate change agenda forward. Furthermore, bringing together a diverse range of stakeholders helps to avoid unnecessary duplication of efforts and lays the foundation for a sustained, integrated effort.

A principle of the U.S. approach is that addressing climate change is best accomplished while ensuring strong economic growth, both in the U.S. and globally. USAID emphasizes the need to develop markets for commercial investment for economic development and also to grow in a sustainable manner. In the sustainable development context and in developing climate change policy, national and local circumstances matter. There is no one-size-fits-all approach to climate change, for mitigation or adaptation.

## **2. U.S. Agency for international development**

The mission of the U.S. Agency for International Development is to "Create a more secure, democratic, and prosperous world for the benefit of the American people and the international community." The agency does this through grants and loans, projects and analysis to provide economic, development and humanitarian assistance to developing and transition countries. USAID supports economic growth, agriculture and trade, global health; and democracy, conflict prevention and disaster response. The Agency's strength is its field missions all around the world, working in close contact with governments, non-governmental organizations and donors, to provide a local understanding and solutions fitting local circumstances.

### ***The Global Development Alliance***

New instruments, including the Global Development Alliance (GDA), build upon the recognition of the role of foreign direct investment in economic growth. The GDA — USAID's new way of doing business — is based on the recognition of significant changes in the environment of economic development assistance. No longer are governments, international organizations and multilateral development banks the only assistance donors; nor is Official Development Assistance the only source of funding for international economic development. Rather, over the past 20 years, there are a growing number of new actors on the scene: foundations, corporations and even individuals are now financing development assistance, while Private Voluntary Organizations and Non-Governmental Organizations bring other assets to bear on development challenges. As a result, the U.S. Government is not the only, or perhaps even the largest, source of U.S. funding and human resources being applied to the development challenge.

In the 1970s, 70 percent of resource flows from the U. S. to the developing world were from official development assistance and 30 percent were private. Today, 80 percent of resource flows from the U. S. to the developing world are private and 20 percent are public. This shift in flows reflects the emergence of the private for-profit sector and the non-governmental sector as significant participants in the development process. The Global Development Alliance approach responds to this shifting donor environment, and it extends USAID's reach and effectiveness in meeting development objectives by combining its strengths with the resources and capabilities of other prominent actors.

The GDA is a reorientation in how USAID sees itself in the context of international development assistance, in how the Agency relates to its traditional partners, and in how USAID seeks out and develops alliances with new partners. To stimulate movement toward this business model, USAID is dedicating resources and expertise to forge alliances with a range of public and private actors in the development assistance arena. USAID will continue to deploy resources where private funding is not available and for activities where the governmental role is clear and pre-eminent.

### **3. Climate change and development**

USAID sees climate change and development as inextricably linked. From the start, USAID has taken a 'multiple benefits' approach to climate change and development, implementing projects with both development and climate change benefits. Actions to address climate change should be an integral part of sustainable development, and not separate, different or contrary to development goals.

The nature and extent of vulnerability to climate change will ultimately depend not only on physical environmental changes, but also on the capacity of nations, regions, and localities to adapt to those changes. Adaptability will partly be a function of the rate of change. Gradual changes will be easier to cope with than rapid ones. It will also be a function of human resources, investment resources and institutional structures. Skilled and well-managed nations, regions and communities will cope better than others, not only because of their internal capacity to solve problems, but also because of their ability to attract investment by offering a lower risk of failure.

It is clear to all that economic development is necessary for dealing with climate change. USAID has found that a stronger national economy and institutions, or economically viable communities, will be more resilient in the face of climate variability and changing world circumstances in addition to our changing climate. Energy growth is necessary for economic growth, although this may be a growth in service and perhaps not in gross energy consumption.

Climate change mitigation and adaptation are an integral part of development planning and assistance. The ultimate desire is for robust sustainable development; not projects that fail once donor funding ends.

### **4. USAID, climate change and development**

USAID has been including global climate change in its development funding since 1990. The approach has gone through several iterations, but the main thrust has been to incorporate climate change considerations into development projects, either for energy, land management or vulnerability and adaptation. Since 1990, USAID has spent \$2.2 billion on climate-related development projects and programs (Figure 1). During this period, the climate change program has taken a strategic focus on emissions mitigation, land use and forestry, and vulnerability and adaptation.

#### ***The first USAID Global Warming Initiative (GWI)***

From 1990 to 1993, USAID conducted its first Global Warming Initiative (GWI), in response to a Congressional charge to focus global warming activities in "specific key countries which stand to

contribute significantly to global greenhouse gas emissions, and in which actions to promote energy efficiency, reliance on renewable energy resources, and conservation of forest resources, could significantly reduce emissions of greenhouse gases” (PL 101-167, section 534).

The USAID approach to climate change was anchored in the Agency’s mandate for sustainable development. The GWI built on strategies in four areas critical for sustainable development: population and health, economic growth, environment, and democracy (USAID, 1994). The strategies reinforced U.S. policy, complemented the work of other U.S. government agencies, collaborated with international organizations and leveraged donor financial resources. The goal of the GWI was to reduce long-term threats and promote sustainable development, with an approach where energy efficiency, sustainable land use management and lower carbon intensive path can accelerate economic growth while reducing environmental risks. Key countries and regions addressed in the GWI were: Brazil, the Central Africa region, India, Indonesia, Kazakhstan, Mexico, Poland, Philippines, Russia, and Ukraine. The cumulative funding obligation for ‘90 – ‘94 totaled \$240 million.

Lessons learned from the GWI still hold true today, in 2004.

- “The most important lesson learned is that for on-the-ground, lasting results, projects must include training components so that host country nationals will be able to manage and maintain the project.
- International, national, state and commercial interactions are necessary for project success.
- Leveraging works best when all donor partners are part of the project from definition through implementation.
- Replicating model projects has proven to be cost-effective and time effective means of bringing the success and lessons learned from one country to another.
- Projects that are developed jointly need to be housed within one organization.
- It is preferable that policies needed for project implementation are in place before the projects are implemented.”

### ***Global Climate Change Strategy (GCCS)***

In 1994, USAID presented a new Global Climate Change Strategy (GCCS). The goal of the new strategy was: “To contribute to global efforts to stabilize greenhouse gas concentrations and to assist countries to adapt to the adverse effects of climate change, while maintaining economic growth in developing and post-communist countries” (USAID, 1994).

The principle for the Strategy was very similar to the first GWI: an “approach where energy efficiency, afforestation, and a less carbon intensive path toward modernization accelerates economic growth while reducing local, regional and global environmental risks.”

Strategic elements of the GCCS were to address policy reform, capacity building, technology cooperation, and financial leveraging with other donors. The strategy concentrated on mitigation and cooperative work through the U.S. Country Studies Program (an U.S. interagency-funded international effort described below). A secondary objective of the Strategy was to address vulnerability and adaptation (which was also an element under the U.S. Country Studies Program).

## **U.S. Country Studies Program**

The U.S. Country Studies Program (CSP) was an interagency effort (including the State Department, the Department of Energy, the Environmental Protection Agency, National Oceanographic and Atmospheric Administration, and USAID) conducted from 1993 to 1997. The objectives of the program were to assist developing and transition countries to: establish a process for developing and implementing national policies and measures, including formulation of National Communications; develop information to further national and international discussions, and support principles and objectives of the U.N. Framework Convention on Climate Change (U.S. Country Studies Program, 1999). Participating countries developed inventories of their anthropogenic emissions of greenhouse gases, assessed their vulnerabilities to climate change, evaluated response strategies for mitigating and adapting to climate change, formulated national climate change action plans, and performed technology assessments.

The CSP recognized the need to address greenhouse gas inventories, mitigation, and adaptation planning together. The CSP provided technical assistance to countries through workshops, guidance documents and analytical tools, and consultations with technical experts. Ultimately, 56 countries were involved in CSP and produced various reports on their efforts. The CSP still generates positive returns, well after its conclusion. Some country participants are now prominent experts in the climate change field and participants in the international process. The many reports from the program are often still the best information on climate change analysis for the developing countries that did them.

### ***Regional initiatives***

From 1995 to 1997, while the Country Studies Program conducted its work, there were four Regional Initiatives at USAID. These initiatives addressed four key regions: Asia, Latin America, Central and Eastern Europe, and Africa. In addition, USAID's Global Bureau (which has now become the Economic Growth, Agriculture and Trade Bureau) committed an additional \$8.5 million to a Global Climate Change Initiative (USAID, 1997).

The Asia Sustainable Energy Initiative, budgeted at \$13.5 million, focused on development and implementation of energy production and distribution strategies that reduce greenhouse gas emissions and support economic growth while minimizing economic and environmental risks. The program focused on three key countries: India, Indonesia and the Philippines. Activities included placement of energy advisors in missions, grants to support energy efficiency and renewable energy projects, and training programs.

In Central and Eastern Europe, and the Newly Independent States, USAID carried out an initiative to increase energy efficiency, reform markets and improve natural resource management to improve the environment. The initiative focused on Russia, Poland, Ukraine and Kazakhstan and its neighbors, with a budget of \$50 million. The initiative supported national climate change action plan efforts, technology needs assessment, efforts to reduce greenhouse gas emissions through energy efficiency, renewable energy and transport activities, increased removals by carbon sinks, and included outreach and capacity building.

In the Africa region, the Central African Regional Program for the Environment (CARPE) is a 20-year commitment that was created to address deforestation in the Congo Basin to conserve biological diversity and address potential changes in global and regional climate. The Congo Basin contains the largest area of contiguous moist forest in Africa and the second largest in the world. CARPE works to identify and establish the conditions and practices required to succeed in conservation and sustainable use of the natural resources in the Basin, in a manner consistent with local culture. CARPE works in conjunction with a number of local and international partners in the Central African Republic, Equatorial Guinea, Gabon, Republic of Congo, Burundi, Cameroon, Democratic Republic of Congo, Rwanda, and Sao Tome & Principe. CARPE is working to apply and implement sustainable natural resources

management practices in the field, improve environmental governance in the region, and strengthen natural resources monitoring capacity.

In the Latin America region, the Environmental Initiative for the Americas (EIA) worked to address sustainable energy use in the Americas Hemisphere. Emphasis was placed on community-based programs, and provision of sustainable energy services to meet growing needs and needs of those underserved. The program also addressed trade and environmental regulation, urban and industrial pollution, and coastal ecosystem conservation. The budget for the EIA was \$9.5 million.

### ***Climate Change Initiative (CCI)***

In 1997, USAID announced the Climate Change Initiative, which committed \$1 billion in spending over the 1997-2002 period. USAID would devote \$750 million in climate change spending at field missions, and also leverage another \$250 million in credit instruments to foster climate friendly investment in developing countries. The program would be documented by annual reporting from the missions on their activities under the Initiative. The CCI included a broader vision of development assistance that recognizes that reducing the climate change threat is central to successfully promoting sustainable development (USAID, 1998).

The initiative had three areas of emphasis:

- Decreasing the rate of growth in net emissions (energy: less carbon intensive fuel sources, renewable energy, energy efficiency; LUCF: conservation, sustainable management, soil carbon, animal husbandry; urban and industry: methane capture, EMS adoption, clean technologies, transportation systems, regulatory frameworks);
- Increasing developing and transition country participation in the goals of the FCCC (emissions inventories, vulnerability, tech transfer, JI projects, policies/sustainable development);
- Decreasing vulnerability to the threats posed by climate change (natural disaster preparations, adaptability and efficiency of vulnerable systems, ecosystem health, shared resource conflict resolution).

## **5. Current USAID climate change related programs**

The Economic Growth, Agriculture and Trade (EGAT) Bureau at USAID provides technical leadership for the Agency on a number of areas critical to economic development. These include health issues, urban and poverty issues, energy, natural resources management, and climate change. The Bureau works to increase incomes, reduce hunger, improve natural resource management and environmental quality, and equips institutions and people with information, knowledge and skills to build equitable and sustainable economies and societies. An important role for the EGAT Bureau is to promote science-based decision making in global, multi- and bilateral initiatives, partnerships and in activities that increase agricultural productivity, efficient resource use and environmental protection, including climate change.

### ***Global Climate Change Program***

USAID and its Field Missions continue their climate change efforts as part of the overall U.S. approach to climate change – in fact, budgets have increased in recent years.

The current Global Climate Change (GCC) Program is one of several Presidential initiatives; President Bush's announcement in February 2002 regarding U.S. climate policy made it clear that USAID,

with a robust and increased portfolio of climate-related activities, would continue to play a key international leadership role on climate change. USAID's Congressional earmark is currently budgeted at \$180M (Office of Management and Budget, 2004); and it has been as high as \$207 million in the past. The program carries out activities in 38 countries and 12 regional programs.

The goals of USAID's climate change program are to promote development that minimizes the associated growth in GHG emissions, assists vulnerable populations and ecosystems to adapt to potential impacts from climate variability and change, and supports climate observation systems. To accomplish this goal, USAID works in developing and transition countries to implement "win-win" solutions that provide climate-related benefits while also meeting development objectives in the energy and water sectors, urban areas, forest conservation, agriculture, and disaster assistance. These solutions include activities that: (1) promote the transfer of clean energy technologies; (2) measure reductions in GHG emissions; (3) promote carbon management through improved land use; (4) support countries to participate more effectively in the U.N. Framework Convention on Climate Change; and (5) assess vulnerability to the impacts of climate change and increase adaptive capacity. The Agency has focused its climate change activities in three sub-regions (Central Africa, Central America and Central Asia) and eight countries (Brazil, India, Indonesia, Mexico, Philippines, Russia, South Africa, and Ukraine).

In the future, the GCC program efforts will still have a foundation of mitigating emissions, addressing sequestration and land use, and addressing vulnerability and adaptation. USAID envisions a series of improvements addressing measurement of the effects of projects, and development of tools more easily applied by development projects to address and measure climate change components.

To improve measurement of the effects of land use and forestry projects, USAID will be building on current efforts and scientific experience with measuring carbon in soils and forest projects, such as in the Congo basin. USAID will work to improve efforts to measure GHG emissions, building on our efforts with the World Resources Institute greenhouse gas inventory effort in Mexico City. In addition, the Agency has been a long-time International Council for Local Environmental Initiatives (ICLEI) supporter, which has been developing and disseminating tools to analyze emissions and mitigation at the local level. (These projects often provide significant cost savings through improved energy use.) In addition, we are developing and testing a manual and adaptation tool for implementation in development planning.

## **Energy**

The EGAT Bureau funds projects that provide or promote clean, efficient energy, increased access to energy, and improved health and air quality related to energy use. The team provides analytical, technical and project assistance for programs in industrial environmental policy and management, energy policy, energy efficiency, renewable energy, nuclear safety, environmentally sound energy development, and energy technology. The EGAT Bureau is responsible for developing approaches, in collaboration with Mission personnel, that will expand international knowledge of and demand for clean energy technologies. Current funding is about \$36 million per year.

USAID is an active participant in the World Summit on Sustainable Development (WSSD) Energy initiatives, including the Global Village Energy Partnership (GVEP) [<http://www.gvep.org/>]. The previous Village Power program was renamed the Global Village Energy Partnership in recognition that modern energy services are more than simply electricity, and include heating, cooling, and very importantly, cooking. The partnership activities focus on five service lines: country action planning and implementation, emphasizing energy-poverty linkages and contributing to national and local poverty reduction strategies; capacity strengthening, with a focus on entrepreneurs and consumers; financing facilitation, including expanding existing programs, financial institutions and financial instruments to better suit the needs of investors, developers and consumers; knowledge management, including sharing

lessons learned and best practices for improving energy delivery and use; and monitoring and evaluation, to track energy service impacts on poverty reduction, while enhancing partner accountability for tangible results. Through EGAT, USAID also participates in the Renewable Energy and Energy Efficiency Partnership (REEEP) led by the United Kingdom, initiated at WSSD.

### **Natural resource management**

The EGAT Bureau also has a significant impact on carbon sequestration through efforts to address deforestation, threats to biodiversity, and improved agricultural practices. EGAT's top priority is helping USAID Missions design and implement development strategies that reflect the intrinsic linkages connecting healthy ecosystems to sustainable economies, good governance, and equitable and just societies. EGAT objectives include improved biodiversity conservation and management; improved management of natural forests; improved land management capacity; and improved integrated management of freshwater, coastal and aquatic resources. In addition, the EGAT provides technical assistance and leadership to address U.S. Government foreign policy initiatives.

- Through the Global Conservation Program, a partnership with six U.S.-based conservation organizations, EGAT supports strategic conservation and development programs, including community-based natural resources management, protected areas management, enterprise development, and policy development.
- EGAT promotes sustainable forest management through improved forestry practices; responsible trade in forest products; expanded community-based forest management; policy and regulatory reform; reduction in illegal logging; and improved knowledge of forest ecosystems and management of forest resources. EGAT activities support agro-forestry, biodiversity conservation, carbon sequestration, and the integration of assessment and monitoring systems for improving forest health.
- EGAT also promotes sustainable productive land use through improved policies and programs aimed at restoration and preservation of land resources at the nexus with poverty reduction, environmental and human health, natural hazard mitigation, conflict resolution, and democratic governance. Missions can draw on EGAT's multi-disciplinary expertise to help them design and evaluate programs leading to improved governance and the sustainable use of natural resources.

### ***Agriculture research and adaptation***

EGAT is tasked with the challenge of assuring that the Agency's research and programs adequately address the challenge of growing food production, rising agricultural productivity, and sound management of the natural resource base necessary for sustainable agricultural development. Climate change poses new challenges for agriculture and development: changing environmental conditions, including precipitation patterns, seasonal temperature cycles, and increasing concentrations of carbon dioxide in the atmosphere, must be considered in applied agricultural research. Practices that increase the storage of carbon in soils and reduce runoff can increase soil fertility and improve productivity, while removing carbon from the atmosphere and helping to mitigate climate change. Application of new technology for surveillance of our environment through satellites will enhance our understanding of the physical environment and bring with it many practical applications for agriculture. EGAT provides analytical, technical and project assistance for agriculture research efforts to reduce production costs, increase profits, improve nutritional quality or other consumer benefits, and reduce variability in output due to weather effects and pest attacks, resulting in environmentally sustainable rural growth. EGAT also provides oversight and financial management services for Agency involvement in the international agricultural research system, participating in the Consultative Group on International Agricultural Research (CGIAR) governance and oversight structures.

## **6. New climate change initiatives and developing countries**

The U.S. is engaged in a number of bilateral and multilateral partnerships to lead progress in areas of common interest for climate change and sustainable development. These involve governments from developed and developing country partners, and members of the major groups interested and involved in the relevant project areas.

The United States has negotiated bilateral agreements with major international partners to pursue research on global climate change and deploy climate observation systems, collaborate on energy and sequestration technologies, and explore methodologies for monitoring and measuring greenhouse gas emissions. Since June 2001, the United States has launched bilateral partnerships with Australia, Brazil, Canada, China, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama, the EU, India, Italy, Japan, Mexico, New Zealand, Republic of Korea, the Russian Federation, and South Africa. The countries covered by these bilateral partnerships account for over 70% of global greenhouse gas emissions.

The U.S. has launched multilateral partnerships to address climate change needs, including hydrogen, carbon capture and storage, methane capture, nuclear, and earth observation.

The International Partnership for the Hydrogen Economy (IPHE) is committed to accelerate the development of hydrogen and fuel cell technologies to improve their energy security, environmental security and economic security ([www.iphe.net](http://www.iphe.net)). The IPHE was established in 2003 as an international institution to accelerate the transition to a hydrogen economy. There are 16 partners; developing country partners are India, Republic of Korea, Brazil, and China. Hydrogen technology roadmaps are being developed in India and Brazil. USAID has provided \$250,000 through a Participating Agency Program Agreement to the U.S. Department of Energy for the Brazil hydrogen roadmap development. The IPHE provides a mechanism for partners to organize, coordinate and implement effective, efficient, and focused international research, development, demonstration and commercial utilization activities related to hydrogen and fuel cell technologies. The IPHE provides a forum for advancing policies, and common technical codes and standards that can accelerate the cost-effective transition to a hydrogen economy; and it educates and informs stakeholders and the general public on the benefits of, and challenges to, establishing the hydrogen economy

The Carbon Sequestration Leadership Forum (CSLF) is an international climate change initiative that is focused on development of improved cost-effective technologies for the separation and capture of carbon dioxide for its transport and long-term safe storage ([www.cslforum.org](http://www.cslforum.org)). The purpose of the CSLF is to make these technologies broadly available internationally; and to identify and address wider issues relating to carbon capture and storage. This could include promoting the appropriate technical, political, and regulatory environments for the development of such technology. Partners include Australia, Brazil, Canada, China, Colombia, European Commission, France, Germany, India, Italy, Japan, Mexico, Norway, Russian Federation, South Africa, United Kingdom, and the United States. There are currently ten projects underway to evaluate and demonstrate carbon sequestration technologies. Although there are no developing country projects, but the intention is that once the technologies are developed and demonstrated, the technologies will be widely transferable to developing countries reliant on abundant coal for power generation.

The Methane to Markets Initiative is designed to promote cost-effective, near-term methane recovery internationally through partnerships between developed countries, developing countries, and countries with economies in transition in coordination with the private sector, multilateral development banks, and other relevant non-governmental organizations. The Initiative is expected to increase energy security, improve mine safety, enhance economic growth, improve environmental quality, and reduce greenhouse gas emissions throughout the world (<http://www.methanetomarkets.org/>). The United States has invited

Australia, Brazil, Canada, China, Colombia, India, Italy, Japan, Mexico, Nigeria, Poland, Russia, South Africa, Ukraine and the United Kingdom to be part of this important public-private partnership. The first Ministerial meeting of the Initiative will be held in Washington, DC on November 15 – 17, 2004. The Initiative will address methane emissions and market opportunities from the oil and gas sector, coal mine methane, and land fill methane. Methane-to-Markets fits our overall strategy to promote cleaner, more abundant and more affordable energy, as called for at the 2002 World Summit on Sustainable Development. It also reduces greenhouse gas emissions as part of our commitment under the U.N. Framework Convention on Climate Change.

The Generation IV International Forum is a multilateral partnership of 10 countries (Argentina, Brazil, Canada, France, Japan, South Africa, South Korea, Switzerland, the United Kingdom, and the United States) and the European Commission that is fostering international cooperation in research and development for the next generation of safer, more affordable, and more proliferation-resistant nuclear energy systems (<http://gen-iv.ne.doe.gov/intl.html>). This new generation of nuclear power plants could produce electricity and hydrogen with substantially less waste and without emitting any air pollutants or greenhouse gas emissions. Since the Forum was formally established in July 2001, the United States has led the development of a technology roadmap, and increased support for R&D projects carried out in support of the Forum's goals.

As a result of the Earth Observation Summit in 2003, an ad hoc Group on Earth Observations (GEO) involving more than 50 nations, the EC, and 30 international participating organizations was established to prepare a 10-year implementation plan for a coordinated, comprehensive, and sustained Earth observation system or systems, Global Earth Observation System of Systems (GEOSS) (<http://earthobservations.org/>). The development of a comprehensive, coordinated, and sustained Earth observation system or systems among governments and the international community will help to understand and address global environmental and economic challenges. The plan for the international Global Earth Observation System of Systems (GEOSS) lists nine societal benefit areas that are relevant for development. The products and capabilities of the GEOSS can be applied to reducing loss of life and property from natural and human induced disasters; understanding environmental factors affecting human health and well being; and improving management of energy resources. The system can be useful for understanding, predicting, mitigating, and adapting to climate variability and change; improving water resource management through better understanding of the water cycle; and improving weather information, forecasting, and warning. The observing system can also lead to improving the management and protection of terrestrial, coastal and marine resources; supporting sustainable agriculture and combating desertification; and understanding, monitoring, and conserving biodiversity. The primary activity for the Agency would be to address human, institutional, national and regional capabilities to contribute to, and make effective use of, earth observation data and information.

## **7. Conclusions**

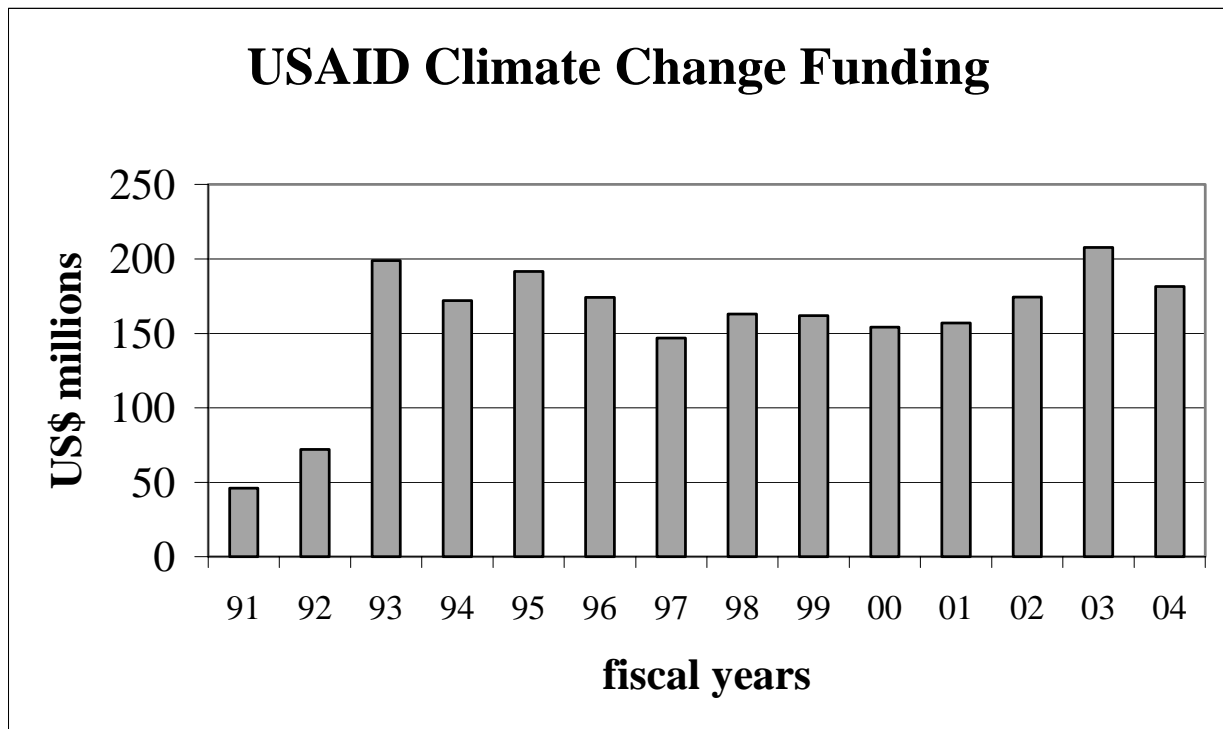
USAID has incorporated climate change actions into its development portfolio for over a decade. The Agency has been key to U.S. Government involvement with developing countries in climate change mitigation and adaptation activities, in part by demonstrating multiple benefits of addressing climate change and development simultaneously.

There is an increasing understanding of the importance of funding mechanisms other than Official Development Assistance, such as the Global Development Alliance, to mobilize funds from a number of sources with common goals and shared risks. The development community must continue to create and employ innovative partnerships to move forward with development while incorporating environmental and social concerns.

A key to addressing climate change will be economic growth in developing and transition countries. Considering that development investments are long-lived, and intended to be sustainable, donors and partners need to take into account both the impacts to the global atmosphere of a development project, consider alternatives, and analyze the vulnerabilities to climate change impacts. Development plans should integrate these analyses. This is planning for successful development, given the likely future climate, one that will be different from today's climate and will continue to change for centuries.

Development programs that integrate climate change aspects as part of a sustainable development program can produce a future world with lower emissions, more robust natural resources and agriculture development, and ultimately a healthier planet.

**Figure 1**



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